✓ (122)
1966

Reprinted from FEDERATION PROCEEDINGS
Vol. 25, 1966, p. 396

M. S. GAZZANIGA and R. W. SPERRY, Division of Biology, California Institute of Technology.
Visuomotor control in monkey following brain lesions.

Split-brain monkeys usually demonstrate an initial transient impairment in ipsilateral eye-hand movements in certain test situations but eventually compensate. The present study is an attempt to learn more about the neural mechanisms involved in such ipsilateral control. Evidence obtained to date supports 3 main points: First, ipsilateral visuomotor control is dependent on the integrity of the motor cortex contralateral to the responding hand. Secondly, massive lesions in the hemisphere ipsilateral to the responding hand sparing only visual, temporal and some parietal cortex do not cause lasting disruption of ipsilateral eye-hand performance. Thirdly, in view of the paucity of proprioceptive information available to the remaining disconnected posterior cortex, it would appear that utilization of this type of information and its integration with the motor outflow is not cortical. It appears that the postcentral cortex is capable of triggering and directing a purposeful movement of the ipsilateral hand given the integrity of the contralateral motor areas. The combined evidence favors the view that the receptive cortex organizes its efferent patterns in terms referent to the goal of the movement.

Supported by United States Public Health Service grant MH 3372.